

# **Islamic Finance Information Superhighway**

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## **ABSTRACT**

The “information technology (IT) revolution,” though often over-hyped, promises the ability to manipulate information with a speed and ease humans have never known. It raises several questions for Islamic banking and finance (IBF). Discussion can be focused by looking at an innovative information-collection, -processing, and -dissemination effort at Harvard University, the Harvard Islamic Finance Information Program (HIFIP), and its original database software, the HIFIP *DataBank*. HIFIP and its *DataBank* occupy a unique position in the drive to integrate IT into IBF. The *DataBank* is a composite of nine component databases on various aspects of Islamic banking and finance. Islamic financial institutions must integrate IT into their operations on all levels, for it is inconceivable that they can compete with non-Islamic, conventional ones otherwise. Moreover, IT can be useful in re-educating Muslim bankers, financial professionals, and consumers on IBF.

## **I. INTRODUCTION**

Hardly a day goes by in which we are not bombarded with descriptions of the marvels of the Information Age. We will be able to purchase things (which we do not need) more easily than ever before, we are told. We will be able to speak to our toasters and describe, in wondrous detail, how dark we would like our bread to be. We will be able to make reservations for our favorite restaurants from our television sets.

No doubt, the Internet, the World Wide Web, and other aspects of the “information technology (IT) revolution” are often over-hyped and over-rated. Yet, the promise of the Information Age is real. Nearly every aspect of our lives is likely to be affected by the ability to manipulate information with a speed and ease never before experienced by humanity.

This development raises several questions that concern Islamic banking and finance (IBF). What role does IT play in IBF today? What role might it play in the future? In particular, discussion can be focused through an examination of an innovative information-collection, processing, and dissemination effort at Harvard University, the Harvard Islamic Finance Information Program (HIFIP), and its original database software, the HIFIP *DataBank*. The Harvard Islamic Finance Information Program is a unique example of the meeting of IT and IBF. Its first-of-its-kind database on Islamic finance, the HIFIP *DataBank*, offers a hint of the benefits that IT holds for Islamic finance.

The ingress of IT into IBF has been discussed in various forums in recent years. Of particular note is the 4<sup>th</sup> Annual Meeting of the Islamic Banking and Finance Forum, which took place in Manama, Bahrain, in December 1997. At this conference, an entire session was dedicated to the issue of IT in IBF. The Harvard Forum on Islamic Finance continues the positive trend of exploring this very important topic.

## **II. INFORMATION TECHNOLOGY: ISSUES AND ACHIEVEMENTS**

The issues involved in the integration of IT into IBF are complex. They can be encapsulated, however, in the following observations. First, the ability to procure, store, transfer, analyze, and otherwise manipulate large quantities of data goes to the very heart of contemporary banking and finance because of the importance of both qualitative and quantitative data to this field. Second, it is inconceivable that Islamic finance institutions can compete with non-Islamic, conventional institutions without fully integrating information technology into their operations. Third, the conventional banking and finance sector is itself undergoing a transformation in the face of the rising importance of IT. Finally, the success

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of the IBF sector, in particular, rests on the re-education of Muslim bankers, financial professionals, and consumers themselves. IT is likely to play a key role in this information campaign.

More specifically, the issues involved in the integration of IT into IBF include network security, document management, internetworking, open systems, e-commerce, e-banking, localization/internationalization, legacy software, banking software customization, accounting software, and data warehousing.

Several people, in various capacities and each in their own ways, have been notable supporters of the integration of IT into IBF. They include Prince Mohamed Al Faisal Al Saud of Dar Al-Maal Al-Islami Trust in Geneva, Switzerland; Dr. S. Nazim Ali at the Harvard Islamic Finance Information Program in Cambridge, Massachusetts, U.S.A.; Mr. Muazzam Ali at the Institute of Islamic Banking and Finance (IIBF) in London, England; and others. The IBF sector is very much in the embryonic stages of its embrace of IT. However, there is evidence that Islamic banks and financial institutions are taking up this challenge.

Several of the better-known achievements are of note. The Faysal Islamic Bank of Bahrain has developed its own customized banking software, called IBS. This software may become the standard banking software for the Islamic financial sector. The IT staff of a prominent Islamic financial corporation, Dallah Albaraka of Saudi Arabia, should also be mentioned as a leader in the area of software customization. The Islamic Development Bank's research wing, the Islamic Research and Training Institute, has been working for some time on its ambitious network, dubbed OICS-Net. This network was designed to connect OIC member states, providing them with access to information on Islamic law, economics, finance, and other matters of mutual interest. Finally, a technology group in Malaysia, Silverlake System Berhad, has developed banking software for the Malaysian dual banking system.

The activities of the various research and training institutions in the field of IBF, such as IRTI, IIBF, and BIRT (Malaysia) also fall within the realm of IT. Their efforts to disseminate information on IBF are a crucial part of meeting the IT challenge. At this point, it is useful to introduce the Harvard Islamic Finance Information Program and its associated software product, the HIFIP *DataBank*, since it occupies a unique position in the drive to integrate IT into IBF.

### III. THE HIFIP *DATABANK*

The HIFIP *DataBank* is the world's first comprehensive electronic information retrieval tool in the field of Islamic banking and finance. Because of the wide-ranging scope of its sources, it corresponds to no single printed source, as is often the case for many CD-ROM and online databases. Along with free-text searching, the *DataBank* offers users the ability to print and export data to Microsoft Excel and ASCII text.

The *DataBank* is a composite of nine component databases on various aspects of Islamic banking and finance: *Shari'ah*, Publications, Financial Institution Profiles, Who's Who in Islamic Finance, Deals and Transactions, Education and Research, Islamic Funds, Macroeconomics, News. A discussion of the individual databases follows.

#### A. *Shari'ah* Database

The *Shari'ah* database is designed to offer access to basic texts that form the theoretical and ideological bases of both classical Islamic financial transaction jurisprudence (*fiqh al-mu'amalat*) and contemporary Islamic finance. It is divided into 5 sub-databases: Qur'an, *Hadith*, *Fiqh*, *Fatawa*, Glossary, which in total have around 750 records.

Since the last version of the *DataBank*, the *Shari'ah* database has changed significantly. The most apparent change is that the user interface for the *Shari'ah* database is the same integrated user interface used by the other sub-databases of the *DataBank*. Thus, the user is no longer required to view entries or search the database in the Adobe Reader environment. The development of a universal *Shari'ah* database entry template for the data entry template software facilitated precise data entry.

Other than the Qur'an database, all of the other sub-databases have undergone significant expansion and restructuring in content. The *Hadith* database consists of about 100 entries, with each entry containing a mean of 3.5 independent reports. The database therefore features approximately 400 Prophetic *Ahadith* of financial relevance. The core *Ahadith* of the database are those reports included by Ibn al-Hajar al-Asqalani in the K. al-Buyu' in his work *Bulugh al-Maram*.

The *Fiqh* database consists of 15 entries, with each entry dedicated to a fundamental concept or instrument in Islamic finance (e.g. *riba*, *bai'*, *gharar*, *qimar*, *salam*, etc.). Each entry provides classical

definitions of terminology, a concise discussion of salient legal rulings across the *fiqh* schools, and a section on the role of the entry topic in contemporary Islamic finance.

The *Fatawa* database contains around 100 entries. Each entry features an English-language translation of a contemporary *fatawa* issued by a notable *fiqh* authority such as the OIC *Fiqh* Academy or the Dallah Albaraka-sponsored Conferences on Contemporary Islamic Economic Issues. Dr. Saleh J. Malaikah, of the Dallah Albaraka Group, greatly aided the developers of the *Shari'ah* database by providing HIFIP with the Arabic texts of *fatawa* compilations as well as other sources.

The Glossary contains nearly 100 entries, with each entry featuring the definition of a basic term in Islamic finance.

Throughout the *Shari'ah* database, an effort was made to follow scholarly methods by providing citations, consistent transliterations, and a balanced presentation of this vast field.

## **B. Publications Database**

The Publications database has been restructured; presently it includes three sub-databases: Articles, Books, and Conference Papers, comprising 3500 records altogether. In the Articles sub-database, the most extensive of the three, the procurement and preparation of articles to be abstracted is an area of primary urgency. The hundreds of articles already entered have been found in library databases and in the resources of the Islamic Legal Studies Program. What currently needs to be done is to actually visit libraries and photocopy articles. Furthermore, HIFIP should subscribe to the core journals in Islamic economics and finance. As HIFIP grows in reputation, publishers may be willing to send HIFIP issues free of cost in exchange for the recognition of being placed on HIFIP's core list.

Regarding the composition of abstracts and reviews, it seems necessary to create a tiered system of writing and editing. There should perhaps be a staff member with special expertise in economics (such as a Ph.D. candidate) whose sole job would be to edit abstracts for their level of scholarly understanding. Even the authors of abstracts should be individuals with strong economic expertise. Also, no individual should be the sole editor of his own work.

Consistency in spelling and names should be maintained by following the Library of Congress transliteration formats. Presently, all existing resources at Harvard University's Library are being used to verify and prepare abstracts for publication. Reuters and Euromoney are being contacted for inclusion of their news items into the *DataBank*.

Similar efforts need to be extended for the procurement of books and monographs, which need to be described in the database in the form of a summary and table of contents. The alternative scheme is to spend time in Harvard University's Widener Library, Law Library, and Baker Library by student researchers capable of summarizing these books.

Previous conference and seminar papers entered in the database must be acquired by contacting the individual authors (which is a tedious and time-consuming activity). For future conference papers, HIFIP must participate or HIFIP's representative must be at the conference to collect the papers. Past experience has revealed that conference organizers will not bother to entertain any such request.

A unique list of Terms is being developed so that terms may be assigned to each entry in the Publications database. This will help users find information on any given topic. References to articles and the table of contents of books are not included in the database. This is due to the shortage of time, the extensive efforts needed to undertake the overall task, and absence of a professional full-time staff.

## **C. Financial Institution Profiles Database**

The HIFIP management staff has spent a great amount of time and efforts in developing the Financial Institution Profiles (FIP) database, which contains approximately 280 records. In spite of HIFIP's many reminders and telephone calls, several institutions have entries that lack information, particularly banks from Indonesia, Iran, Malaysia, and Sudan. In order to fill this gap, HIFIP has designed a questionnaire and circulated it to various banks. More field research and personal visits to target institutions would facilitate the collection of bank annual reports and rating reports.

The FIP database is composed of seven sections for each institution with an entry: Summary, General Info, History, Business, Ratings Management, and Financial Statements.

### 1. Financial Statements

One challenge posed by the FIP database results from the Program's adoption of the Accounting and Auditing Standards for Islamic Financial Institutions. Individual banks' balance sheets have to be

transferred to this standard format. At the Fifth Meeting of the HIFIP Operating Board (in October 1996), it was recommended that HIFIP contact an external agency, such as Price Waterhouse or Ernst & Young, to help HIFIP formulate the financial statements according to AAOIFI's standards. Ernst & Young agreed in principle to help the Program. This is a major undertaking and requires a professional accountant dedicated for this task. In the meantime, HIFIP is presenting the data of financial statements in the bank's own format, for multiple years, and in its own currency. A conversion facility to U.S. dollars is being incorporated in the user interface, whereby the user can display the financial statements in bank's own format and in its own currency or convert figures to U.S. dollars.

## 2. Financial Highlights

HIFIP has made every attempt to obtain data from primary sources to complete the financial highlights of Islamic financial institutions. The International Association of Islamic Banks' (IAIB's) Directory of 1995 has been used to complete the missing information for some institutions. Similarly, the data for financing methods and sectoral activities is taken from IAIB's publication.

## 3. Ratings

Several ratings agencies, both American-based and foreign ones, are actively involved in rating Islamic financial institutions worldwide. The most prominent of them Moody's Investors Service, Standard and Poor's, Capital Intelligence, Thomson Bankwatch, and IBCA. This database does not attempt to evaluate the respective agencies or their ratings; it merely aims to reproduce the most recently available ratings information offered. Although all ratings seek to measure essentially the same variables—bank security, ability to withstand external disruption, ability to make timely repayment, etc.—different agencies apply different procedures or standards to the rating process. Additionally, their ratings scales differ and cannot be interpreted interchangeably. In the user interface, reference is made to the original source of ratings information for complete explanations of rating methodology and an interpretation of the ratings themselves.

## 4. Management Information

In the current user interface, the Board of Directors, Religious Board, Management, and Bank Officials are listed in a hierarchical manner, with links to the Who's Who database so the user can easily view the biographical information associated with each board member.

## 5. Bank Reports

Of the 175 institutions in the Islamic finance sector, only 50 have responded to our request for data. Yet another round of letters has been sent to all the financial institutions, accompanied by our new brochure, requesting them to forward us their annual reports. In any case, the bank reports database is simple and straightforward in content, and the information is presented as it appears in its original format. Some improvements will be made to the viewing environment so the end result is more legible and attractive.

### **D. Who's Who in Islamic Finance Database**

Over 2500 individuals are listed in the Who's Who database. Of these, less than 20% have accompanying biographical information, though all entries, spanning business and academia worldwide, contain a name, affiliation, and contact information. HIFIP has surveyed existing sources and contacted various institutions and individuals in search of the necessary information. HIFIP will continue this task by re-contacting the appropriate sources. The Program will also consult conference brochures and other publicly available data.

### **E. Deals and Transactions Database**

The Deals and Transactions database has expanded rapidly to the point where it contains 850 entries. Each deal, in which Islamic financial institutions have participated, has an entry that features information on the year, country, and region in which the deal was closed, a list of banks participating in the deal, and a brief description of the transaction.

Euromoney's Loanware software has been very helpful in allowing HIFIP to utilize the data of Islamic finance as well as conventional banking deals in OIC member countries. The monthly magazine *Islamic Banker* has also been a good source of information. A short questionnaire was circulated to all

Islamic financial institutions to get data on their deals and transactions. HIFIP received a good response from IICG and ANZ Grindlays about their deals and transactions. We will continue to press individual institutions to provide similar data.

The Financial Institution Profiles and Deals and Transactions databases will have a similar search engine with advance searching options. Searches can be performed by institution, date, amount, and region. One can also search for institutions as the Arranger, Lead Manager, Facility Agent, or Participant in a given deal. The total value of the deal is uniformly presented in American dollars as well as in original currency. A comprehensive market focus index has been designed to facilitate access to data on any trade.

#### **F. Education and Research Database**

The Education and Research database, with about 150 records, is a full-text reference and directory database. Information included here is not covered by any existing database. This is useful for academics and researchers, and for their convenience is divided into four sub-categories:

1. information on associations, foundations, law firms, and other types of companies involved in Islamic finance;
2. courses and academic programs offered in Islamic economics and finance;
3. research centers and universities conducting research in Islamic economics and finance; and
4. a core list of journals and magazines fully devoted to Islamic economics, finance, or related areas.

#### **G. Islamic Funds Database**

With approximately 70 records, the Funds database is a full-text reference and directory type database that lists funds alphabetically by name and provides the details of each fund, including fund manager(s), launch date, type of fund, and description.

#### **H. Country Info Database**

The Country Info database is composed of two secondary databases: the Macroeconomics database and the Regulatory Procedures database. The Macroeconomics database provides information on the 52 OIC countries. For each country, information is presented on the following categories: Background Data, Economy, Transportation, Communication, Exchange Rate, Ministry of Finance, Central Bank, Major Banks, Stock Exchange, and Insurance Companies. The Regulatory Procedures database is a full-text database of regulatory procedures governing the banks in OIC countries, with particular reference to Islamic finance. So far the following nations' central bank regulatory procedures are included in the *DataBank*: Bahrain, Bangladesh, Indonesia, Jordan, Kuwait, Pakistan, Turkey, and Saudi Arabia. All central banks in OIC countries have been contacted for their regulations; we will re-contact monetary authorities that do not respond to our request.

#### **I. News Database**

The News database contains approximately 2000 internationally published news items on Islamic banking, economics, and finance. News items featured here come from periodicals printed in Western countries and the Muslim world from 1990 to the present. HIFIP has been granted copyright permission to reproduce news items from the following sources: Euromoney, Gulf Daily News, Khaleej Times, Gulf News, Sudanow, The Saudi Gazette, Arab News, Business Malaysia, Middle East Economic Digest, Islamic Banker, New Horizon, The Banker, and Business Today.

### **IV. CONCLUSION**

The IT challenge that faces the IBF sector is straightforward, yet, in some ways, sublime. Islamic financial institutions must integrate IT into their operations on all levels: internal operations, customer relations, and so on. They should strengthen their IT staff through aggressive hiring and training. Essentially, they should use IT as a tool to make their operations more efficient.

This last point is crucial. The integration of IT into IBF is unlikely to add something to the sector that does not presently exist in concept. It should, however, aid the IBF sector in achieving its goals and allowing its institutions to function better and faster.